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Over, Under, Around, and Through:

Using the CMMI Continuous and Staged Representations Together to Optimize Process Improvement

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Report Documentation Page

Form Approved
OMB No. 0704-0188

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1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
JAN 2001		**00-00-2001 to 00-00-2001**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Over, Under, Around, and Through: Using the CMMI Continuous and Staged Representations Together to Optimize Process Improvement	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Carnegie Mellon University,Software Engineering Institute,Pittsburgh,PA,15213**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**37**	

Some Questions

How many of you

- feel mostly positive about the CMMI?
- feel mostly negative about the CMMI?
- aren't sure how you feel about the CMMI?
- think it's way too thick?
- think it's not nearly thick enough?
- are curious about all the different models?
  (SW, SE/SW, SE/SW/IPPD, SE/SW/IPPD/SS)
- aren't sure why there are two representations?
  (Continuous and Staged)

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A Note on Perspective

Long-time fan/advocate of CMM-based SPI.

Primary knowledge and experience is in SPI implementation.

Primary work has been with SW-CMM (staged model).

Pre-CMMI exposure to a continuous model has been relatively limited.

Not involved in CMMI development.

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Basic Information

Multiple models:

- SW
- SE-SW
- SE-SW-IPPD
- SE-SW-IPPD-SS

Two representations:

- Continuous
- Staged

SE	Systems Engineering
SW	Software Engineering
IPPD	Integrated Product and Process Development
SS	Supplier Sourcing

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Representation Advantages-Staged

- Provides big picture view that helps establish long-term vision
- High level priorities easier to establish
- Helps with planning and sequencing larger bodies of work
- Identifies relationships and dependencies relatively easily
- Clearly identifies major accomplishments

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Representation Advantages-Continuous

- Provides greater flexibility in sequencing and priorities
- Establishes life cycle view of process area improvement
- Makes early progress and accomplishment more evident
- Lends visibility to conducting more detailed aspects of work
- Provides multiple ways for measuring and representing success

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Representation Disadvantages-Staged

- Great temptation to use maturity levels as goals
- Lacks clearly visible granularity
- Large bodies of work (MLs) require substantial time to complete
- Difficult to show [early] progress and accomplishment
- Perception of failure if maturity level isn't reached

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Representation Disadvantages-Continuous

- Relationships and dependencies more difficult to identify
- More difficult to establish priorities
- Breadth of work can be overwhelming and confusing
- Major accomplishments not clear

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Premises of this Presentation

The availability of two representations is one of the most powerful and useful features of the CMMI.

The continuous and staged representations, used together, provide much more than either representation does by itself.

Those who use both representations to guide their work are likely to be more successful than those who use only one.

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Staged Focus

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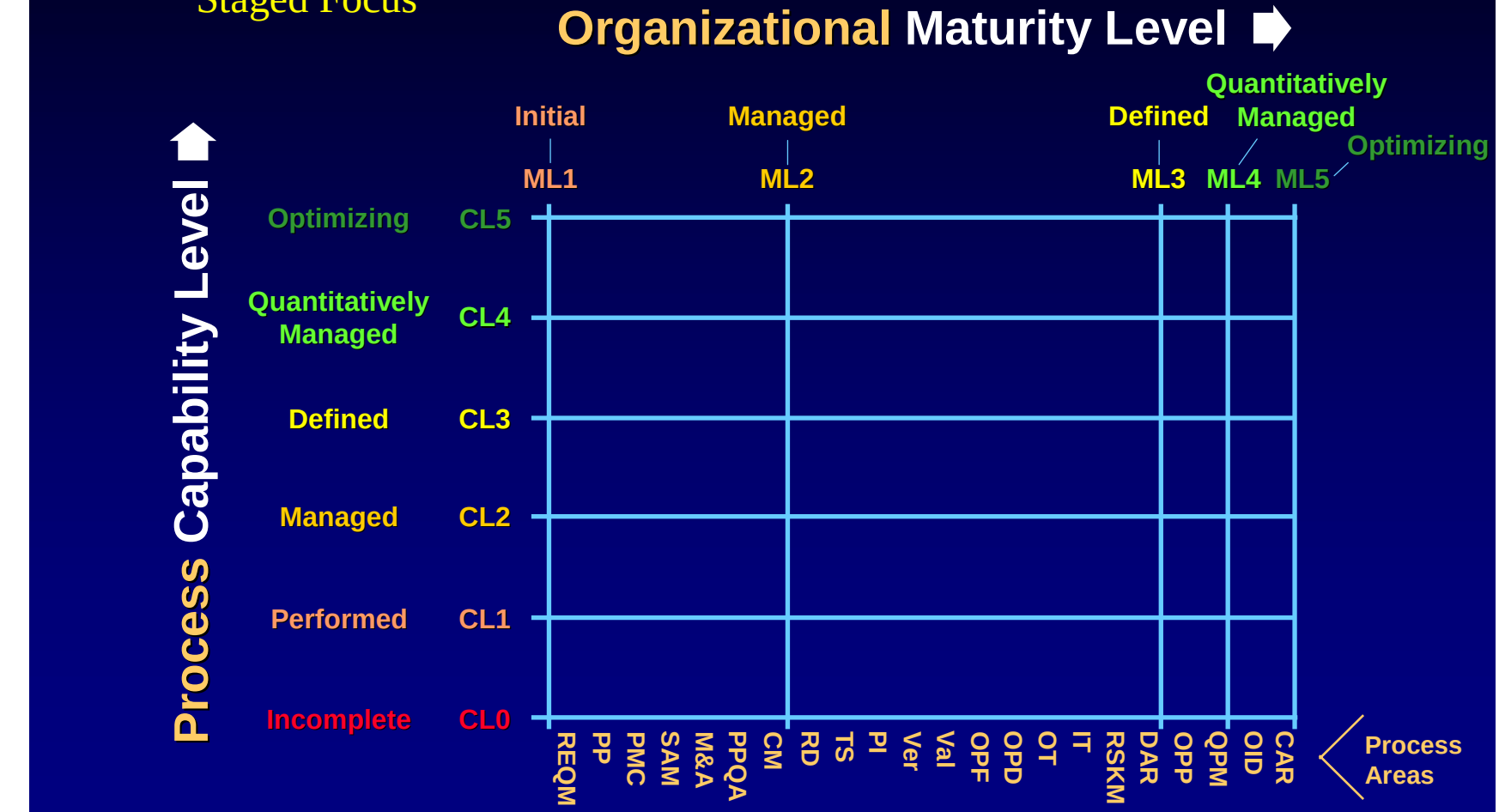
The CMMI Structure

Staged Focus



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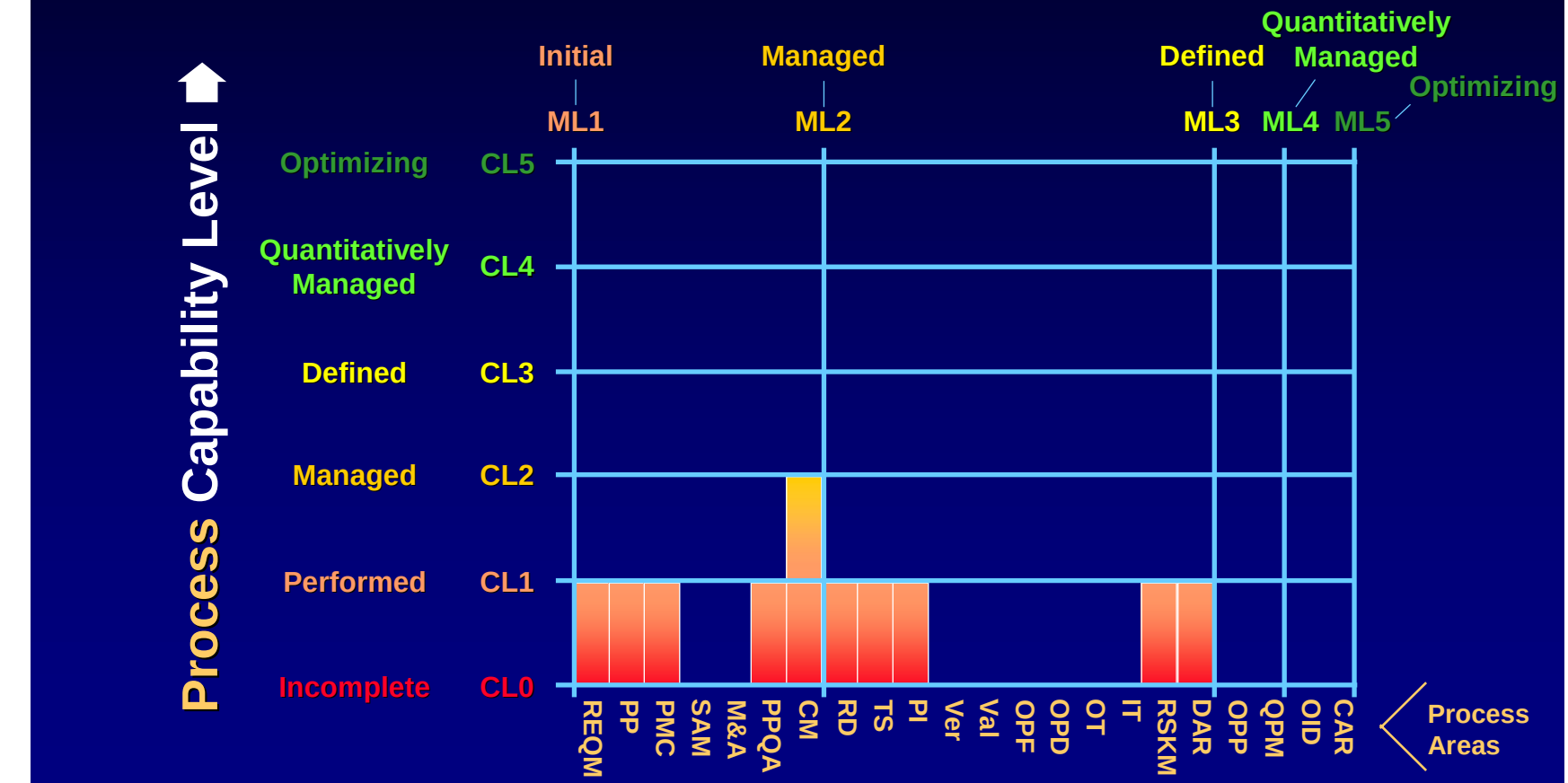
A Typical Starting Point

Staged Focus



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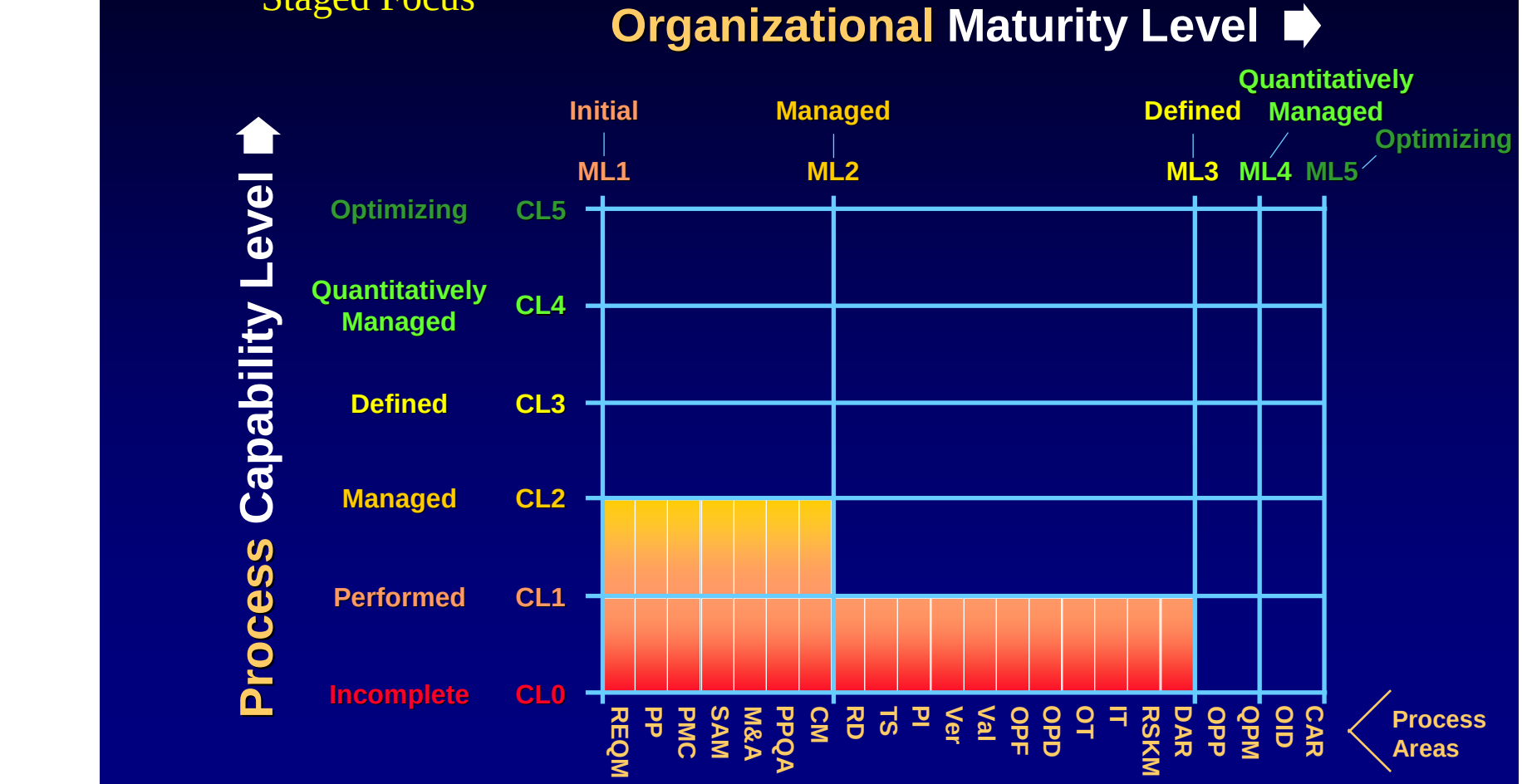
Moving to ML-2

Staged Focus



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Moving to ML-3

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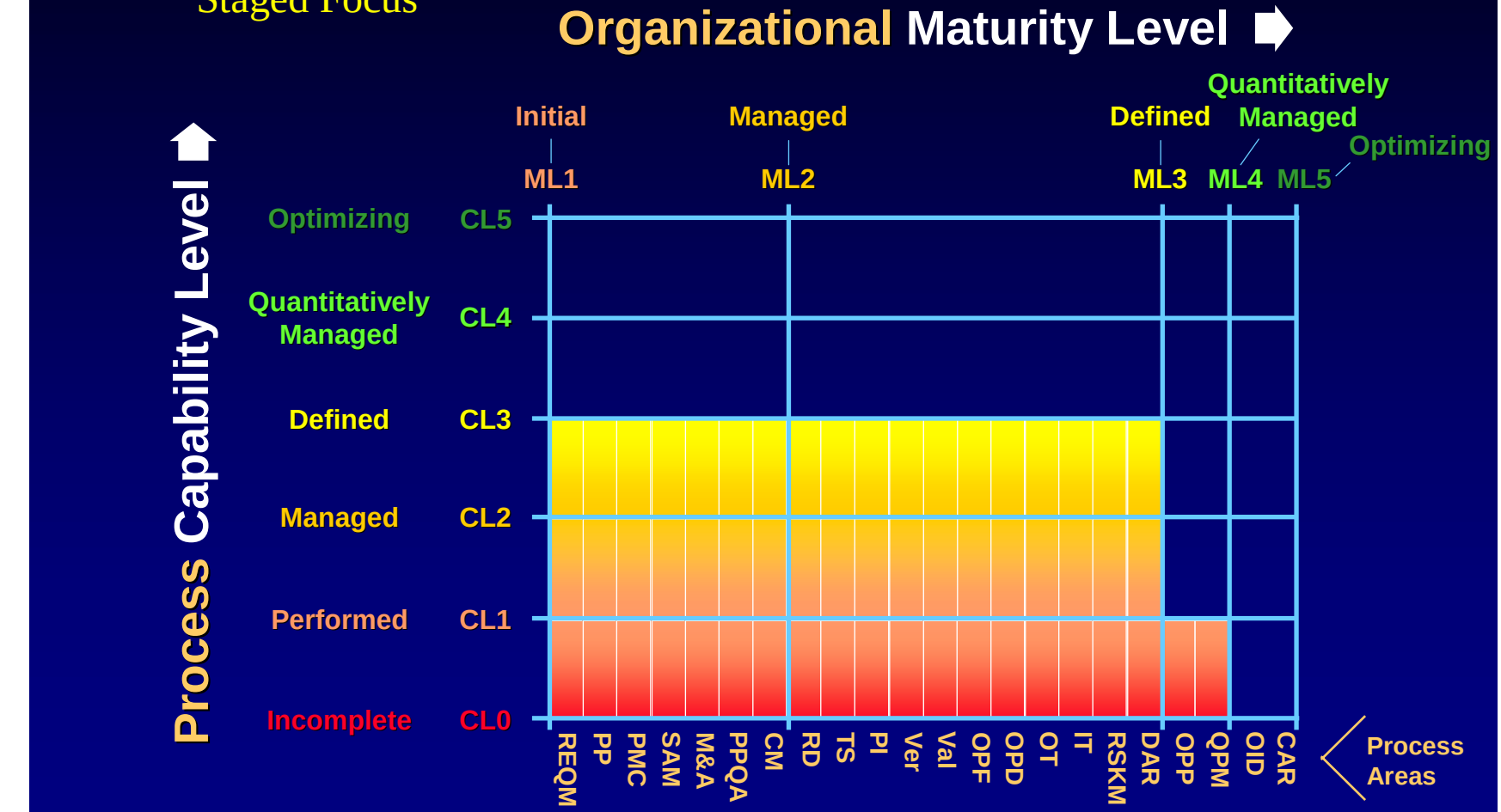

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Moving to ML-4

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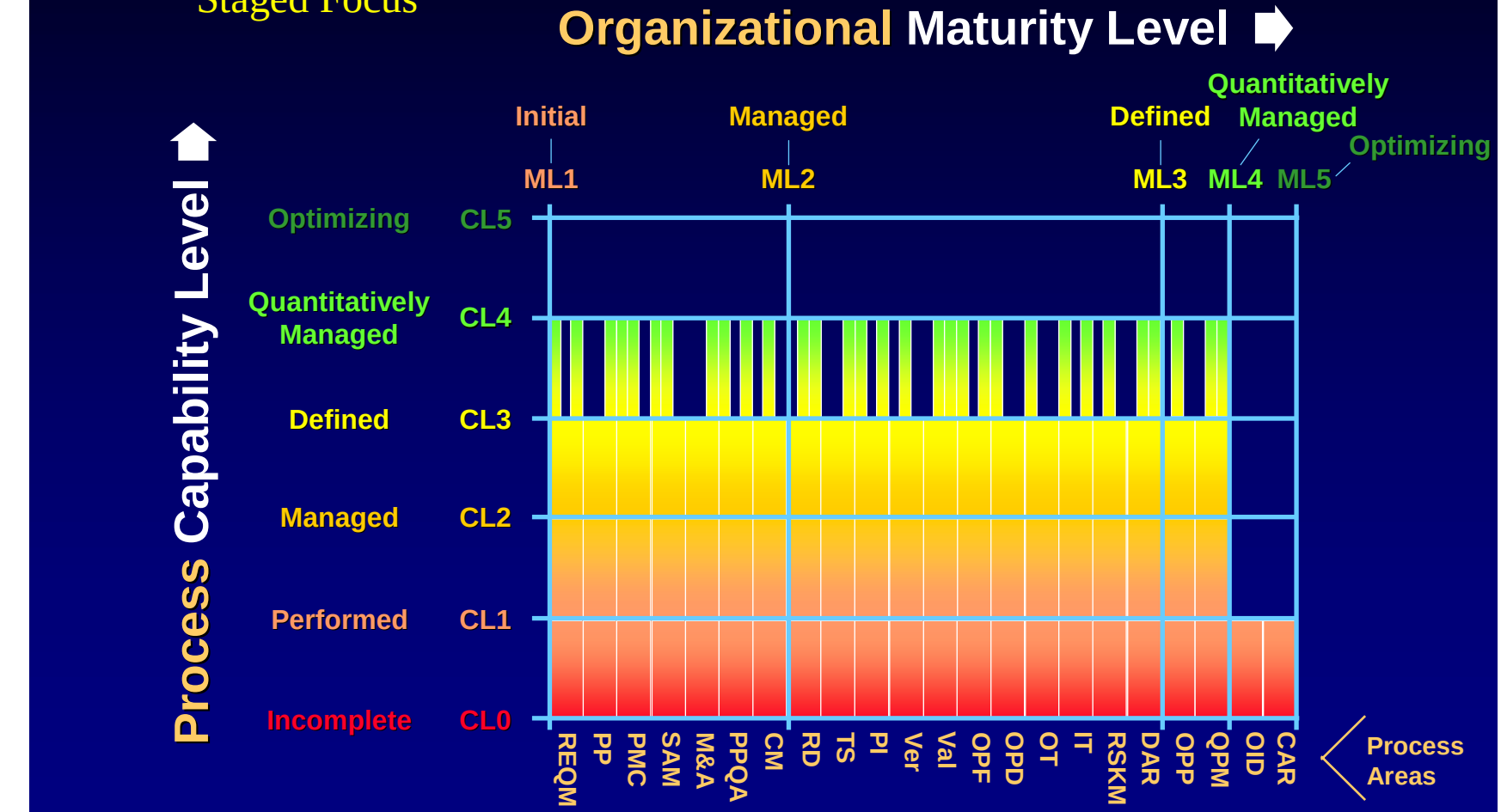

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Moving to ML-5

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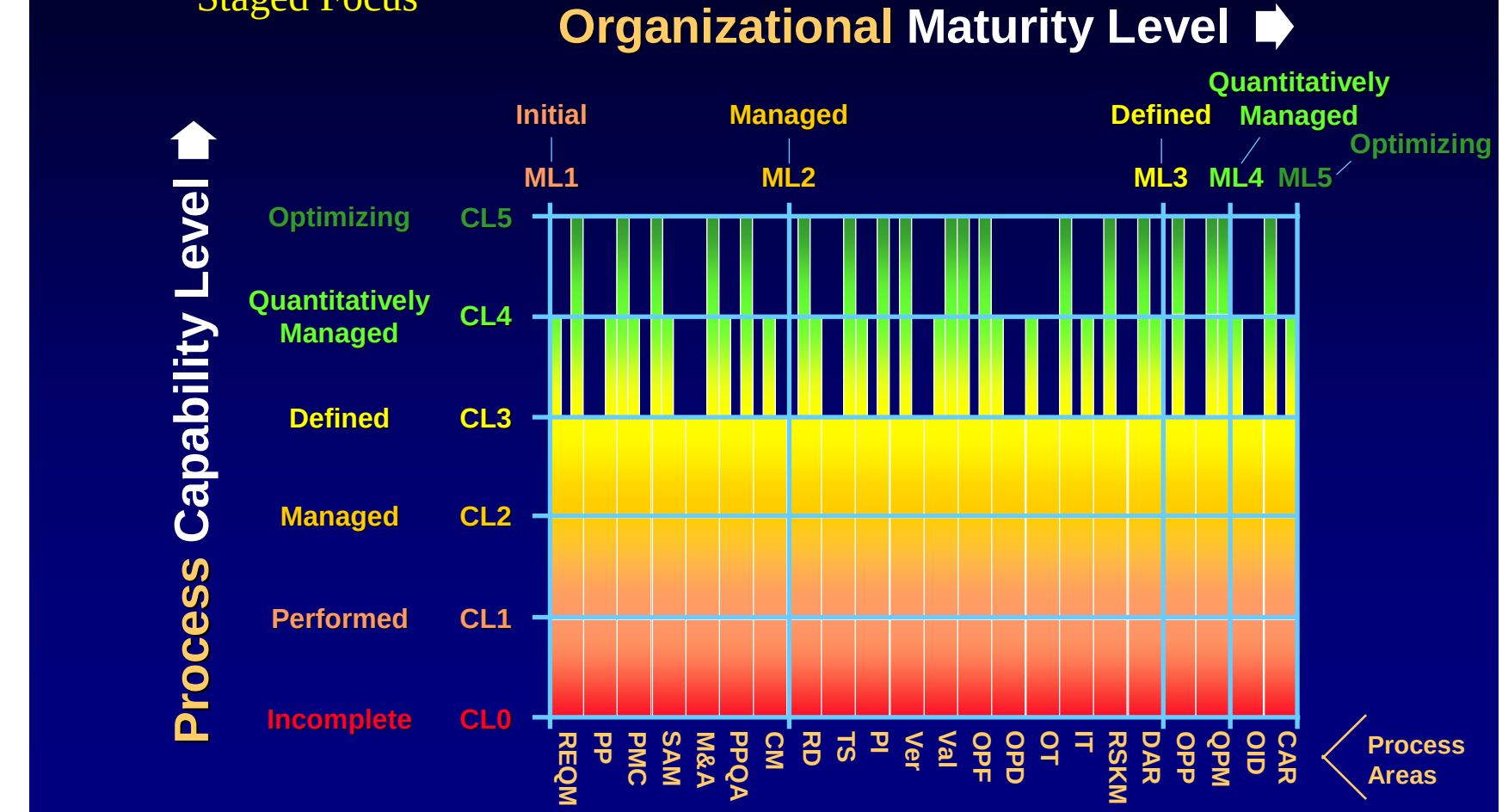

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Staged Supported by Continuous

In summary, the continuous representation provides additional de facto granularity in support of a staged-focus initiative:

- as a guide for detailed “tactical” planning
- to demonstrate intermediate progress short of “PA” or “ML”
- for allaying concerns and building support among key stakeholders

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Continuous Focus

Thinking It Through

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The CMMI Structure

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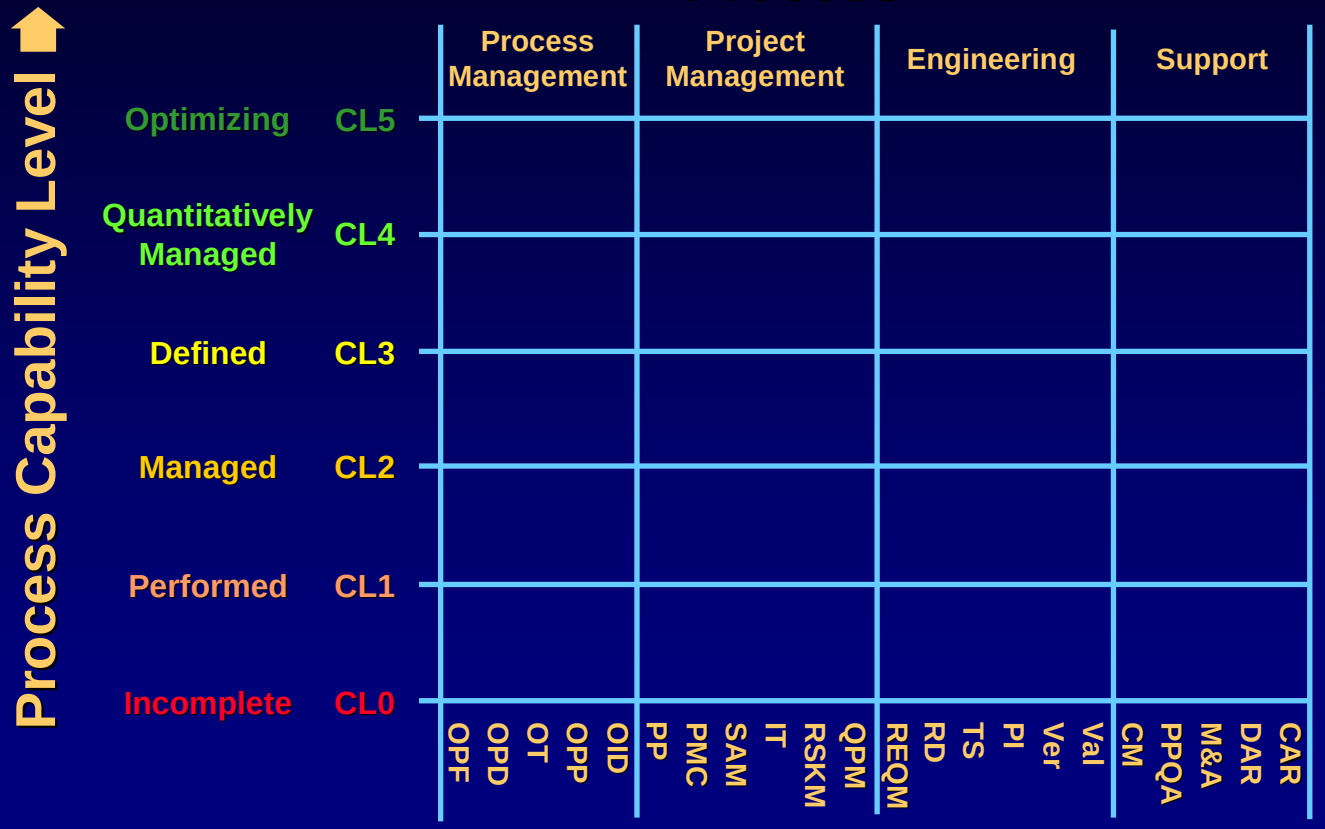

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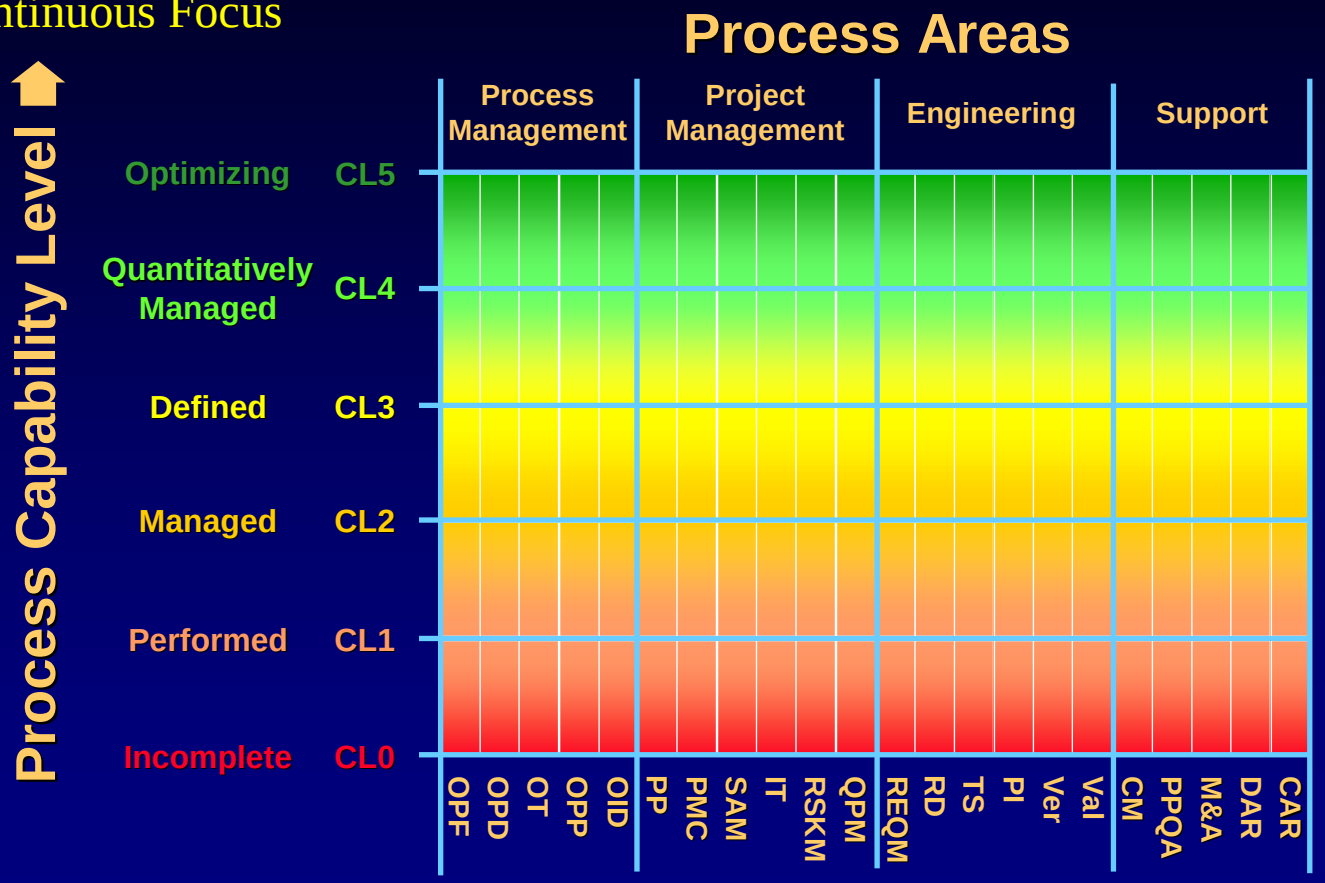
An Approach for the Uninformed

Continuous Focus



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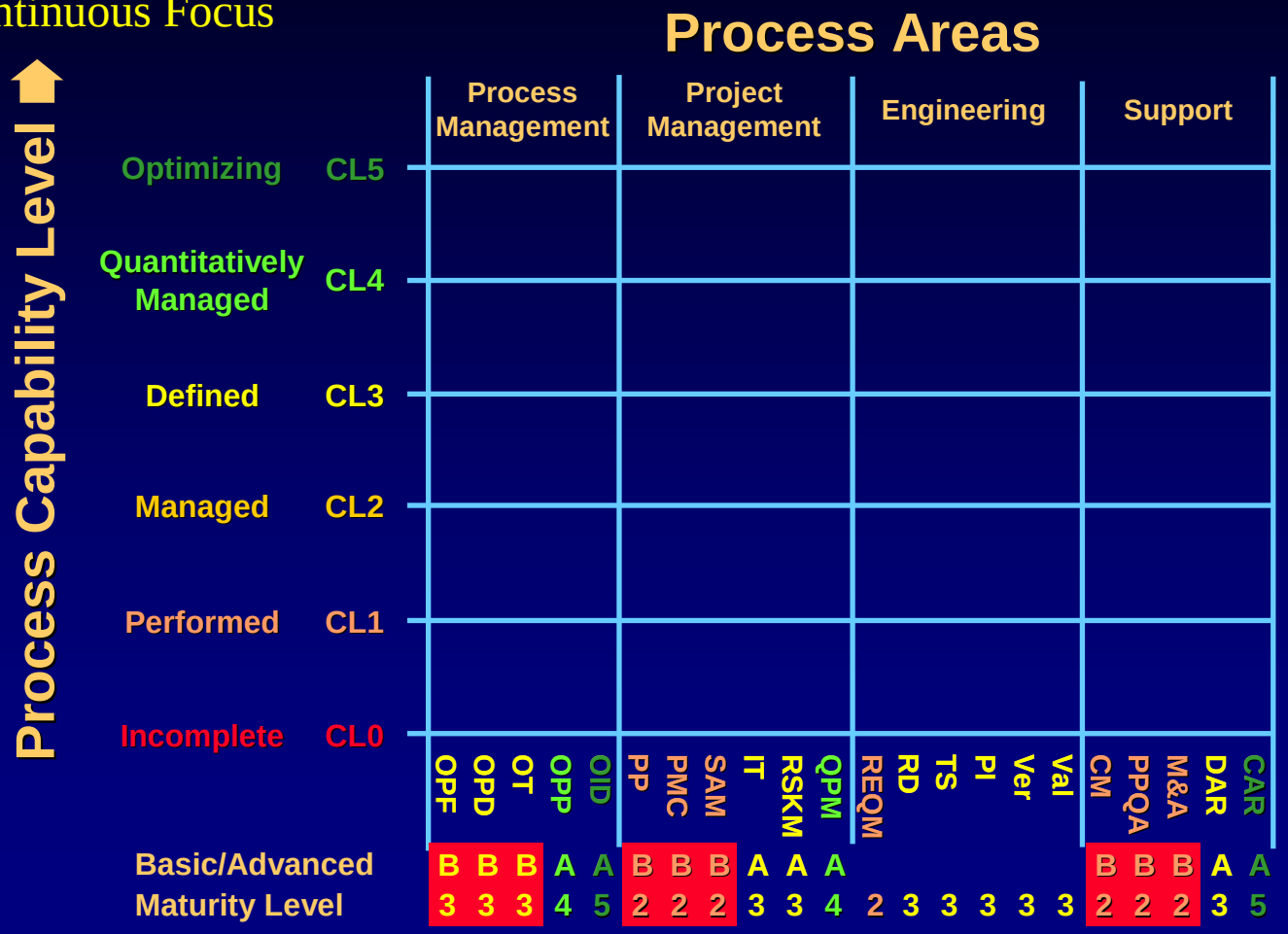
Some Observations on Structure

Continuous Focus



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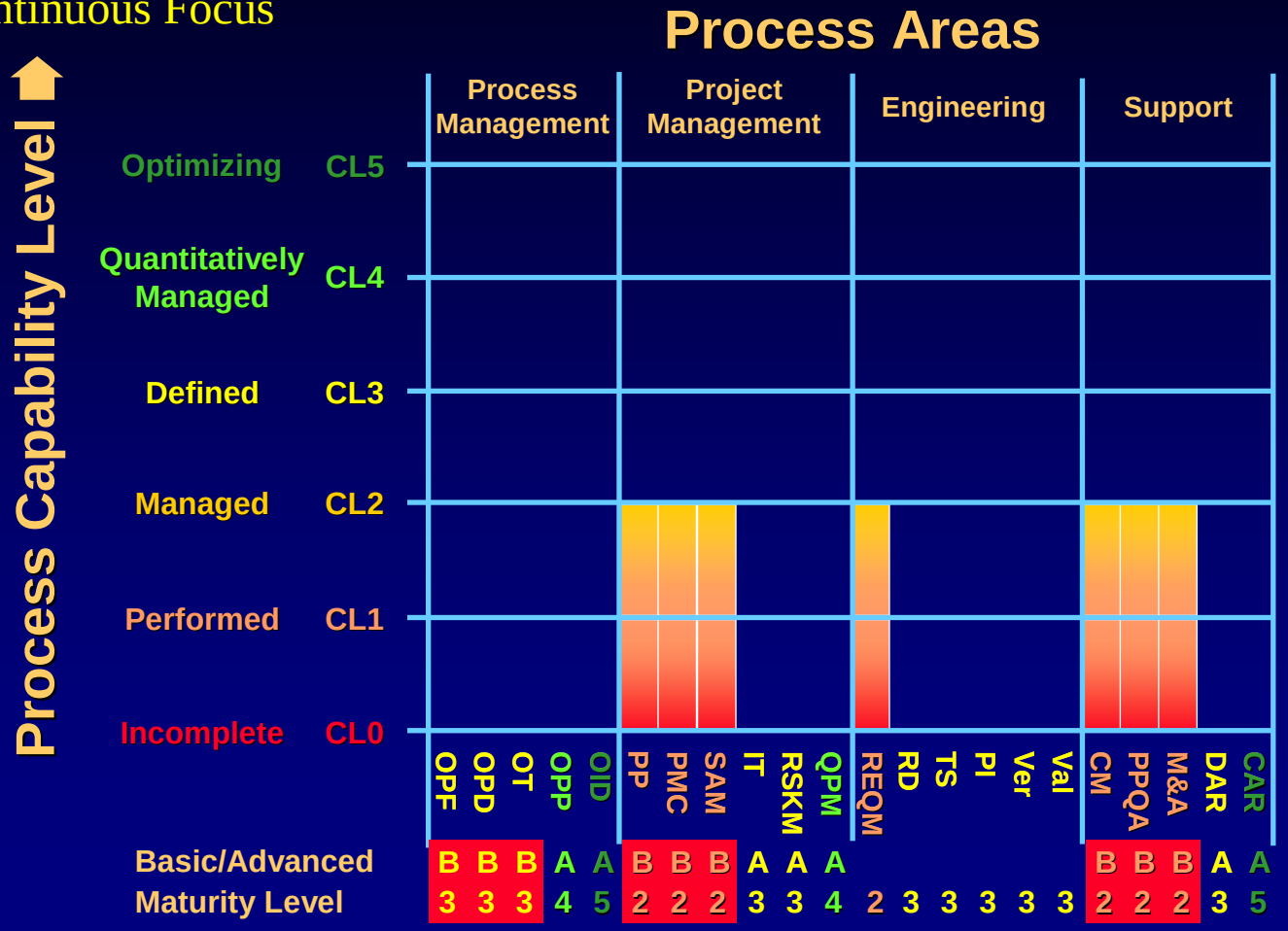
Thinking It Through[1]

Continuous Focus



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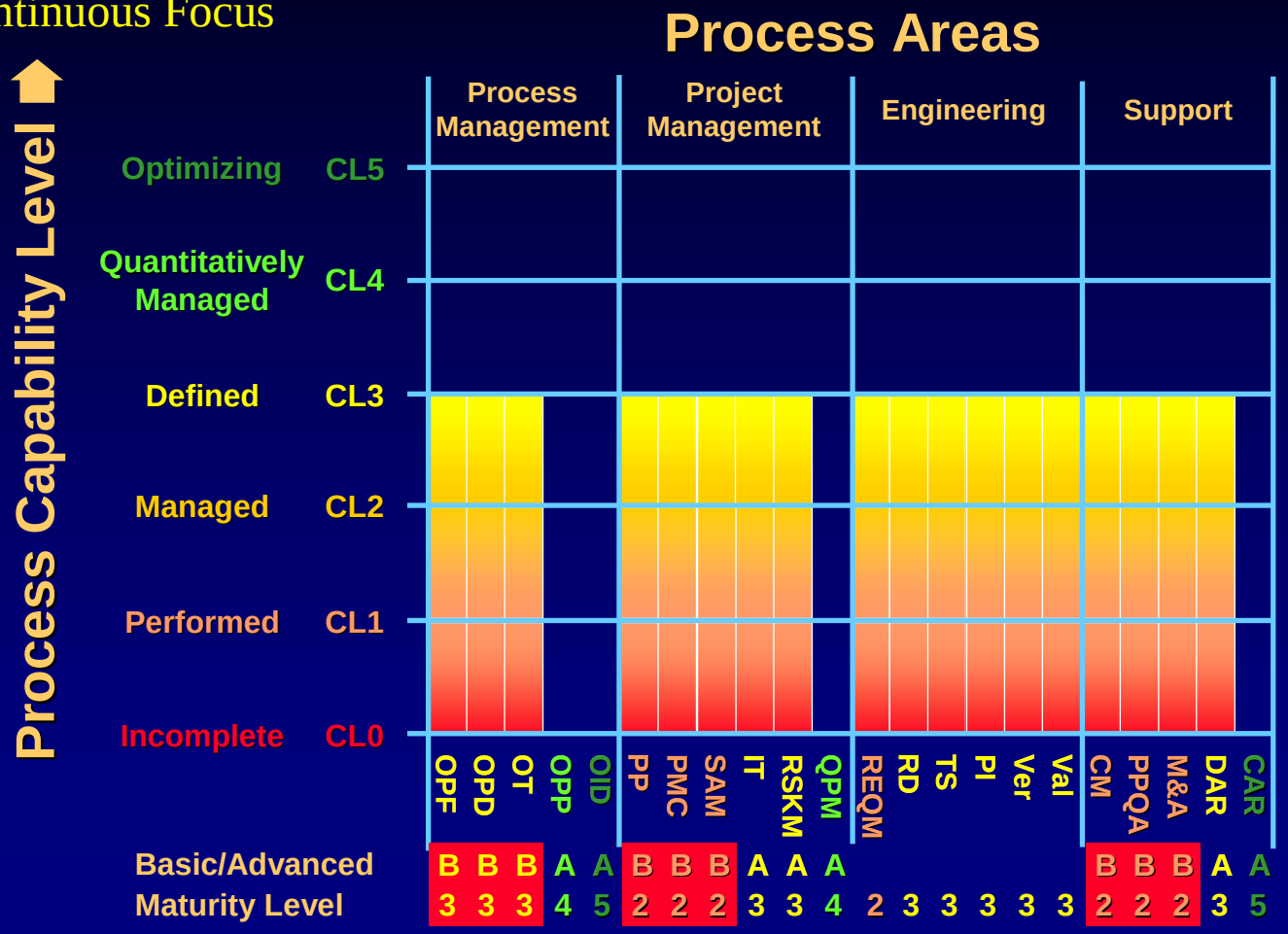
Thinking It Through$_2$

Continuous Focus



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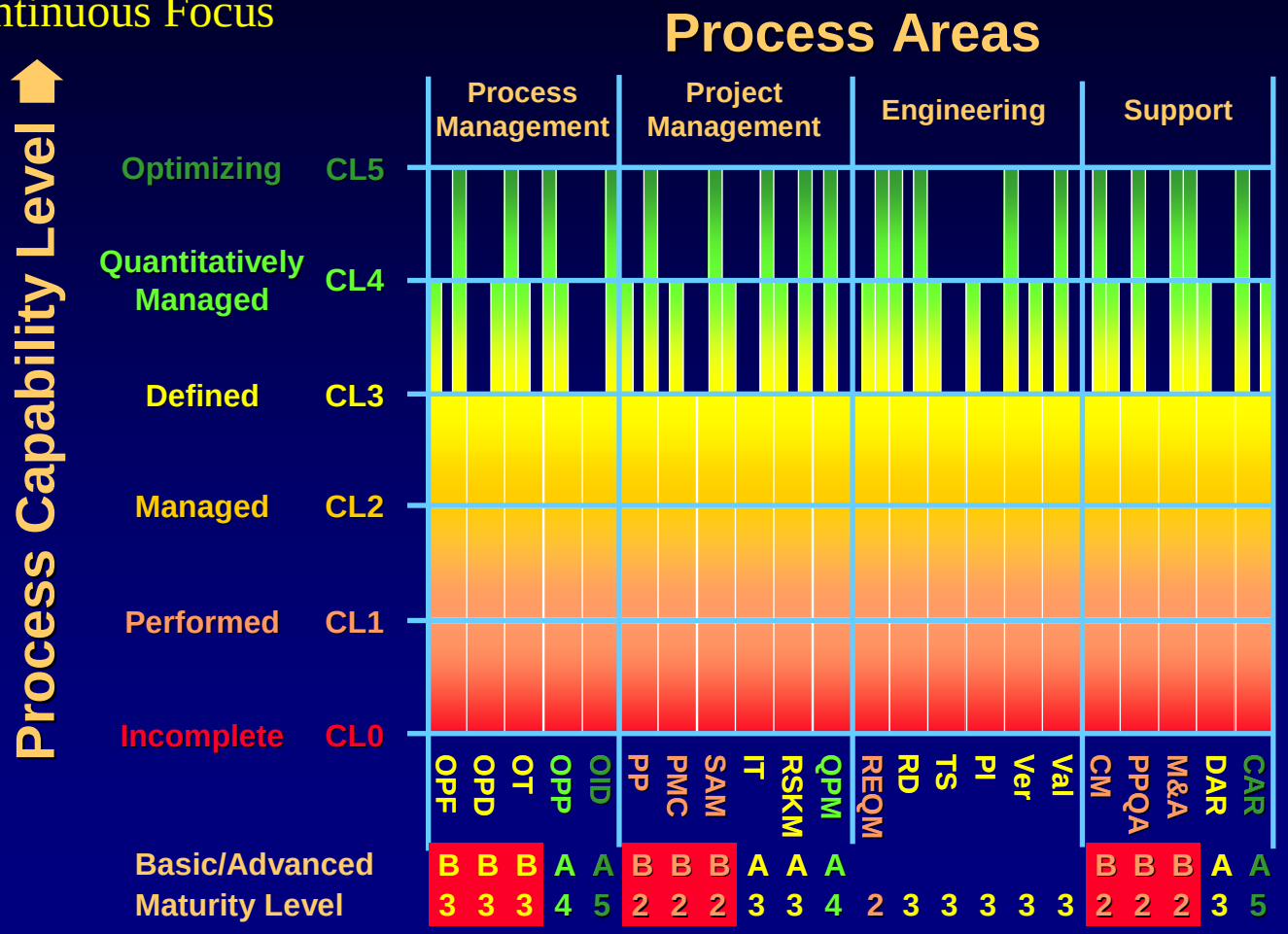
Thinking It Through$_3$

Continuous Focus



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Continuous Focus

Starting with Engineering

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Starting with Engineering: Concept 1.0

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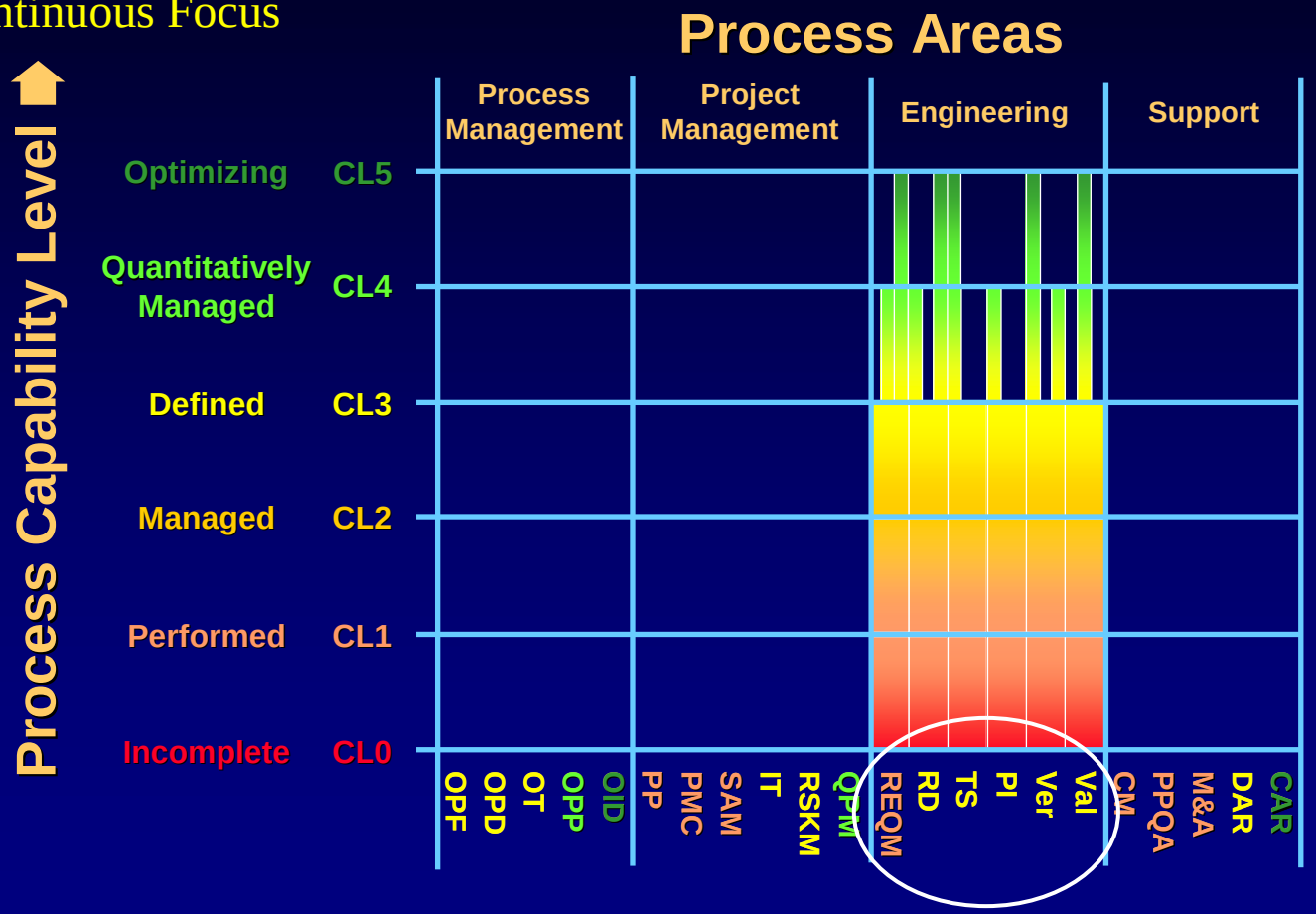

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Starting with Engineering: Concept 1.0

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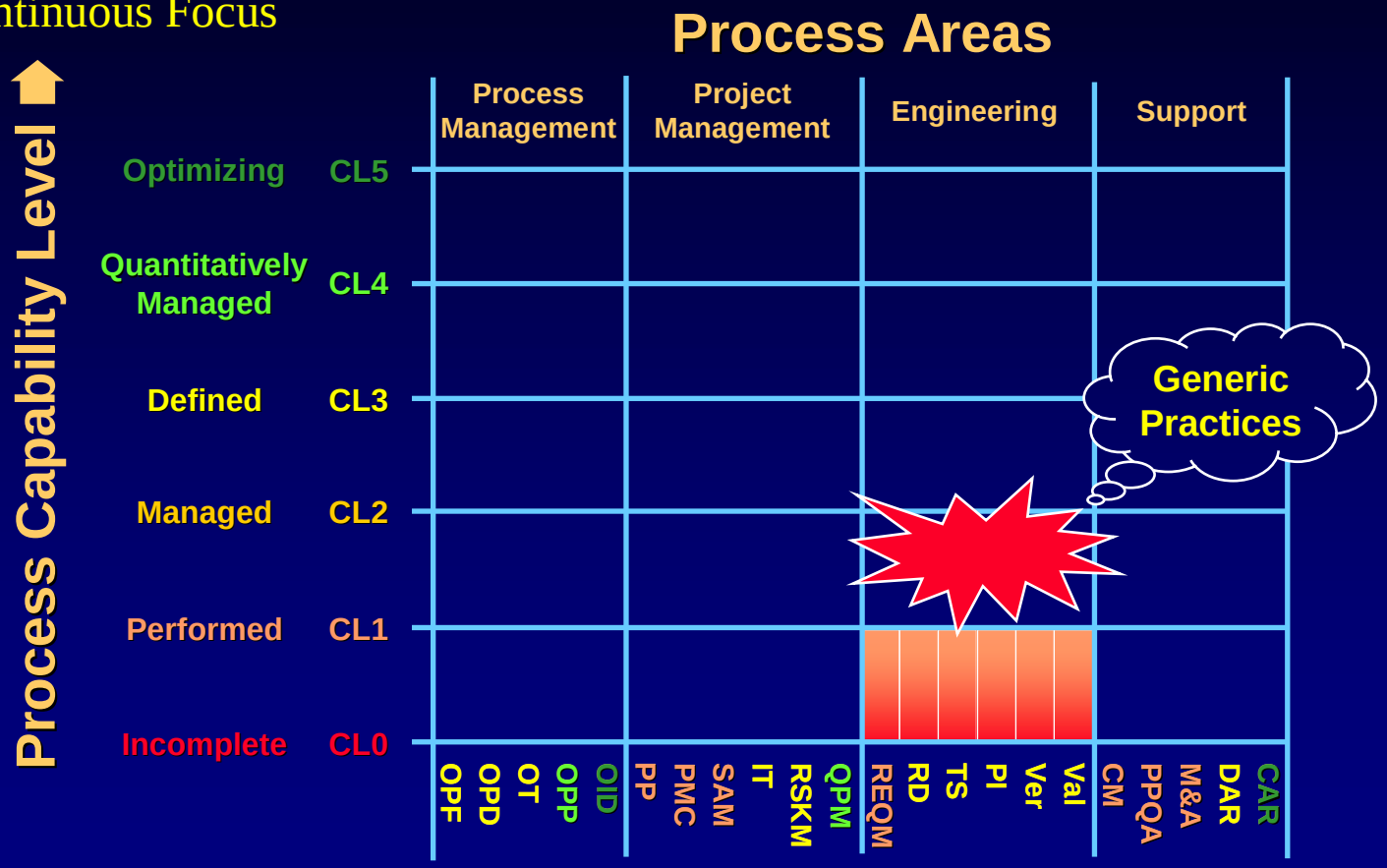

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The Generic Practice Hurdle

Generic Practice		Related Process Area(s)
2.6	Manage Configurations	Configuration Management
2.7	Identify and Involve Relevant Stakeholders	Project Planning
2.8	Monitor and Control the Process	Measurement and Analysis
		Project Monitoring and Control
2.9	Objectively Evaluate Adherence	Process and Product Quality Assurance

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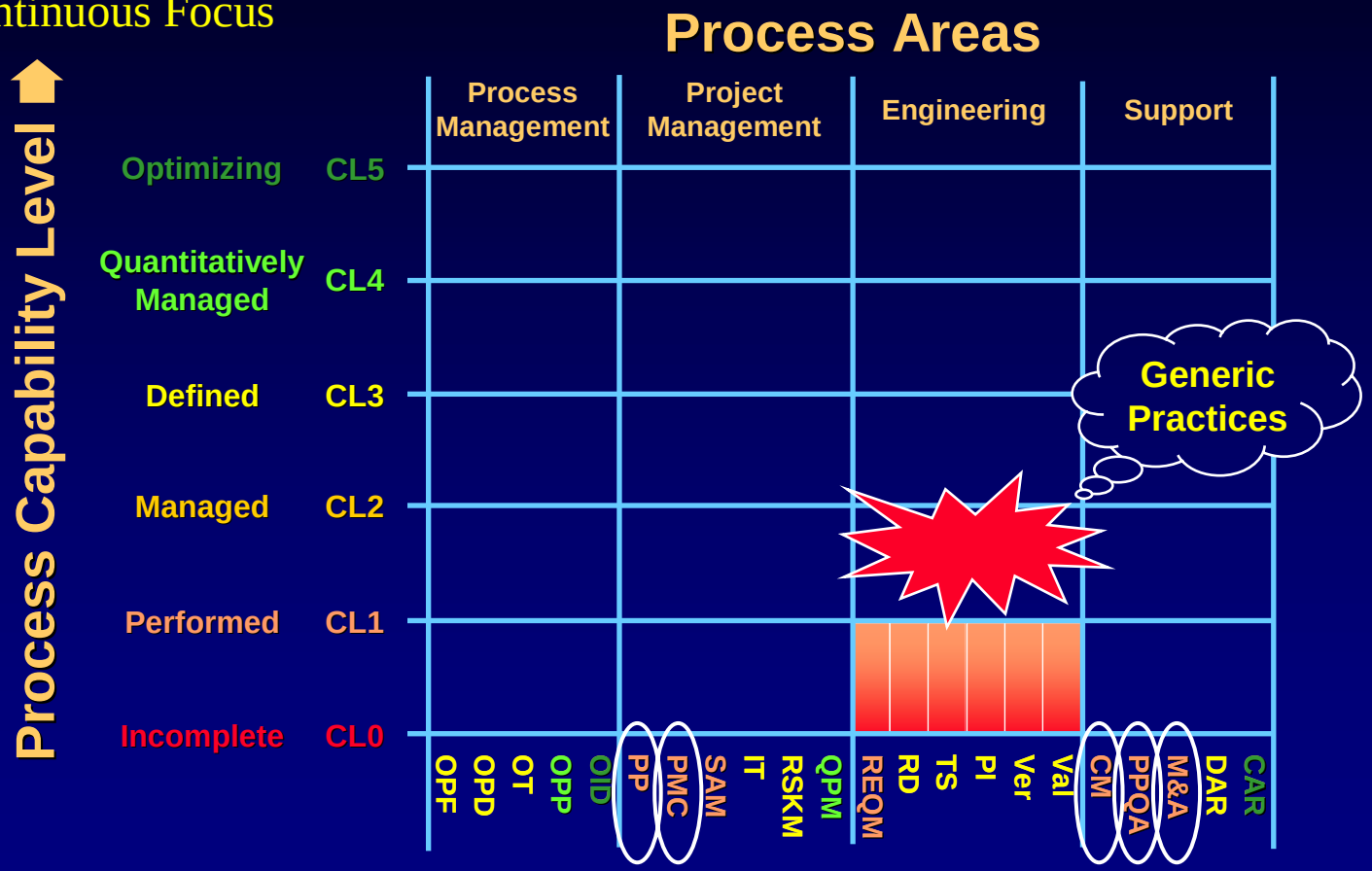

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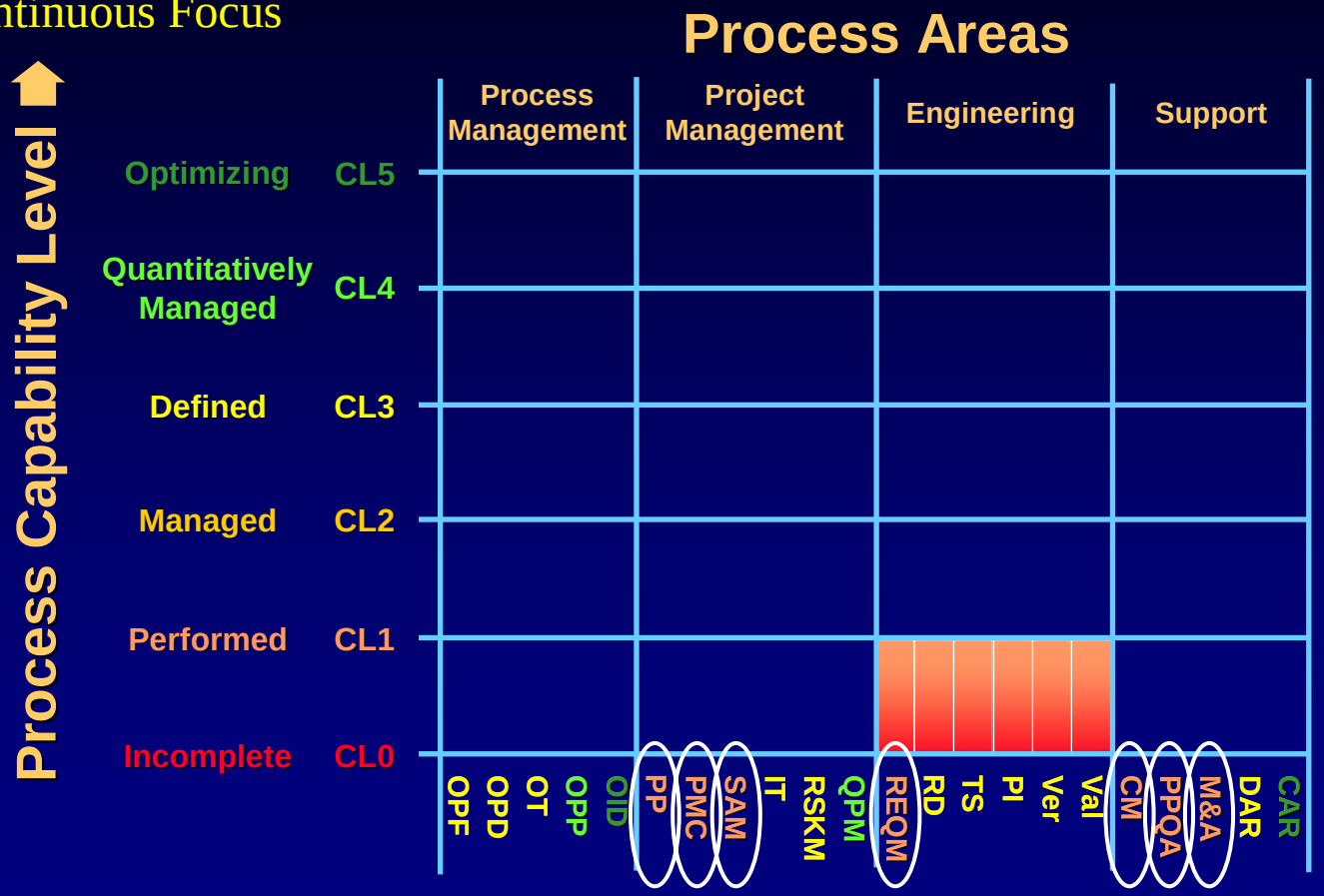

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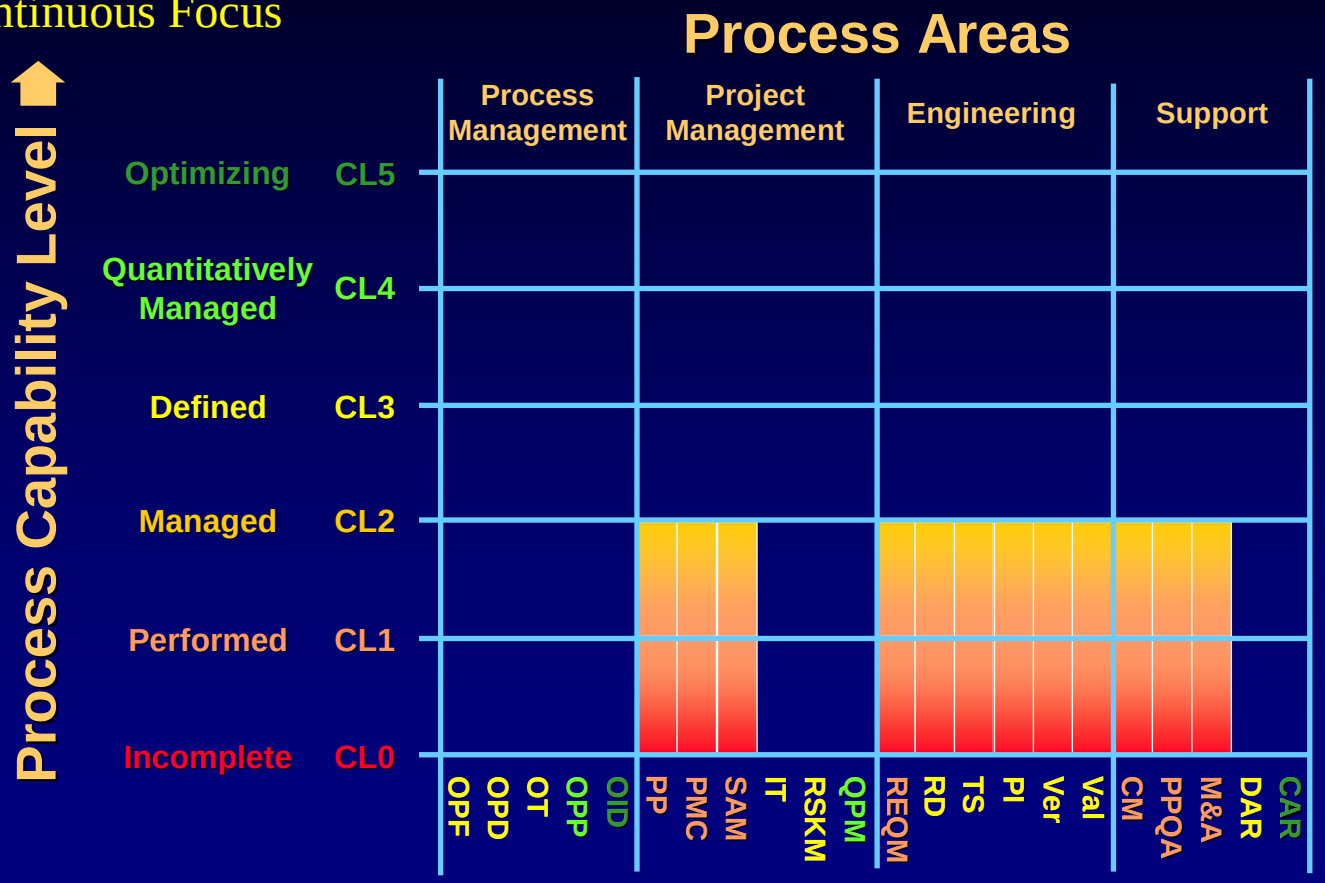
Starting with Engineering: Concept 1.02

Continuous Focus



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Starting with Engineering: Concept 1.03

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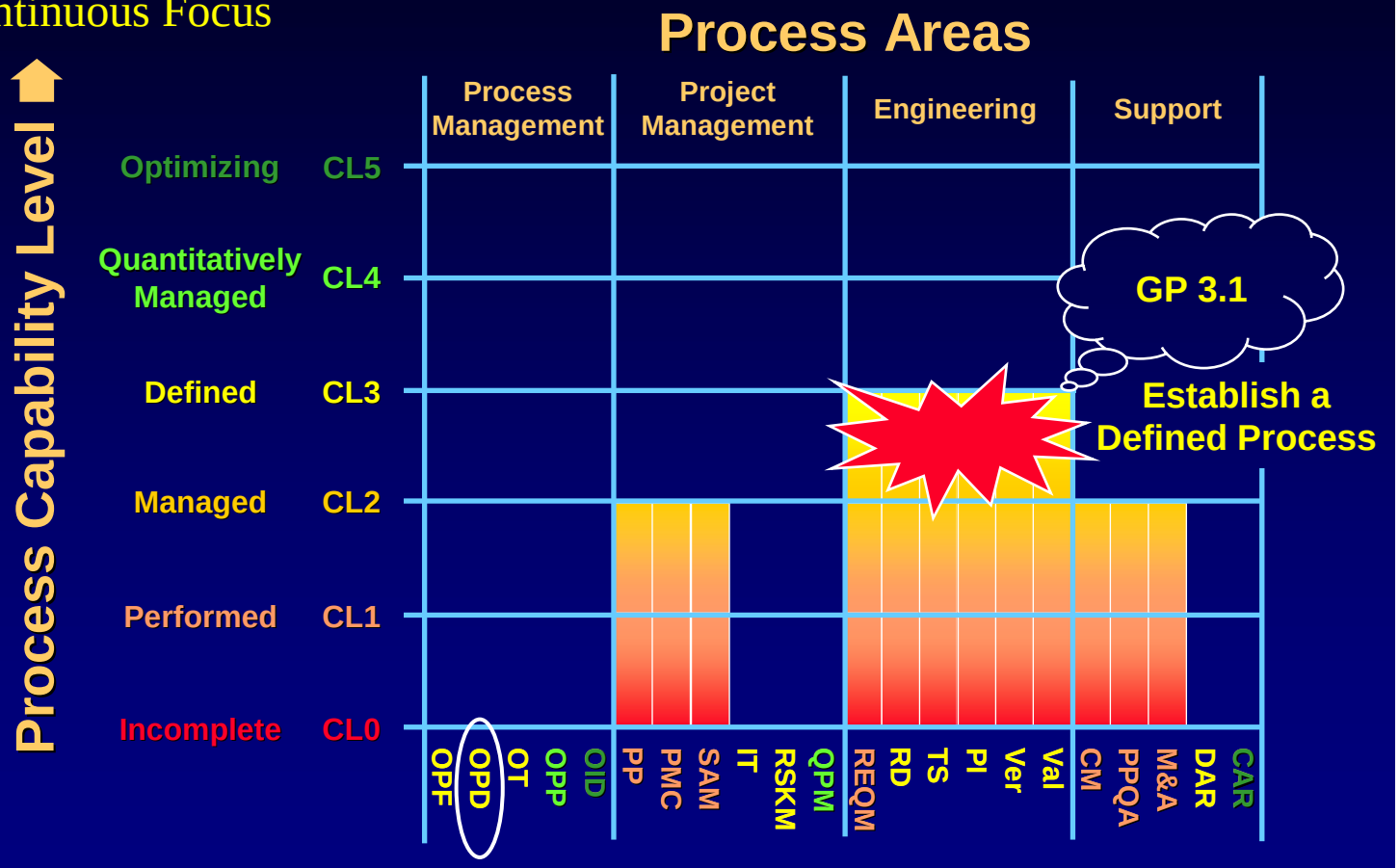

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Starting with Engineering: Concept 1.04

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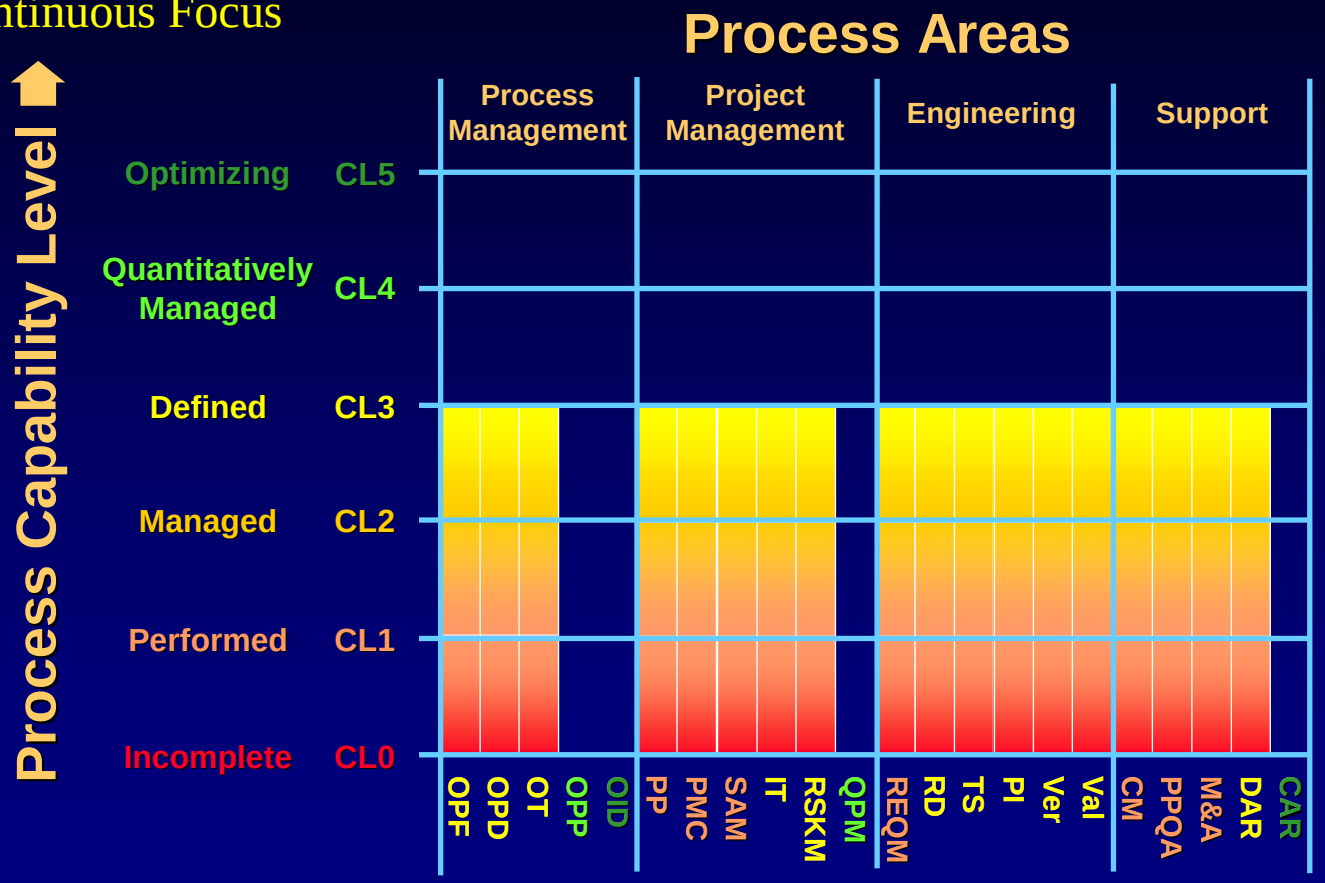

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Starting with Engineering: Concept 1.04

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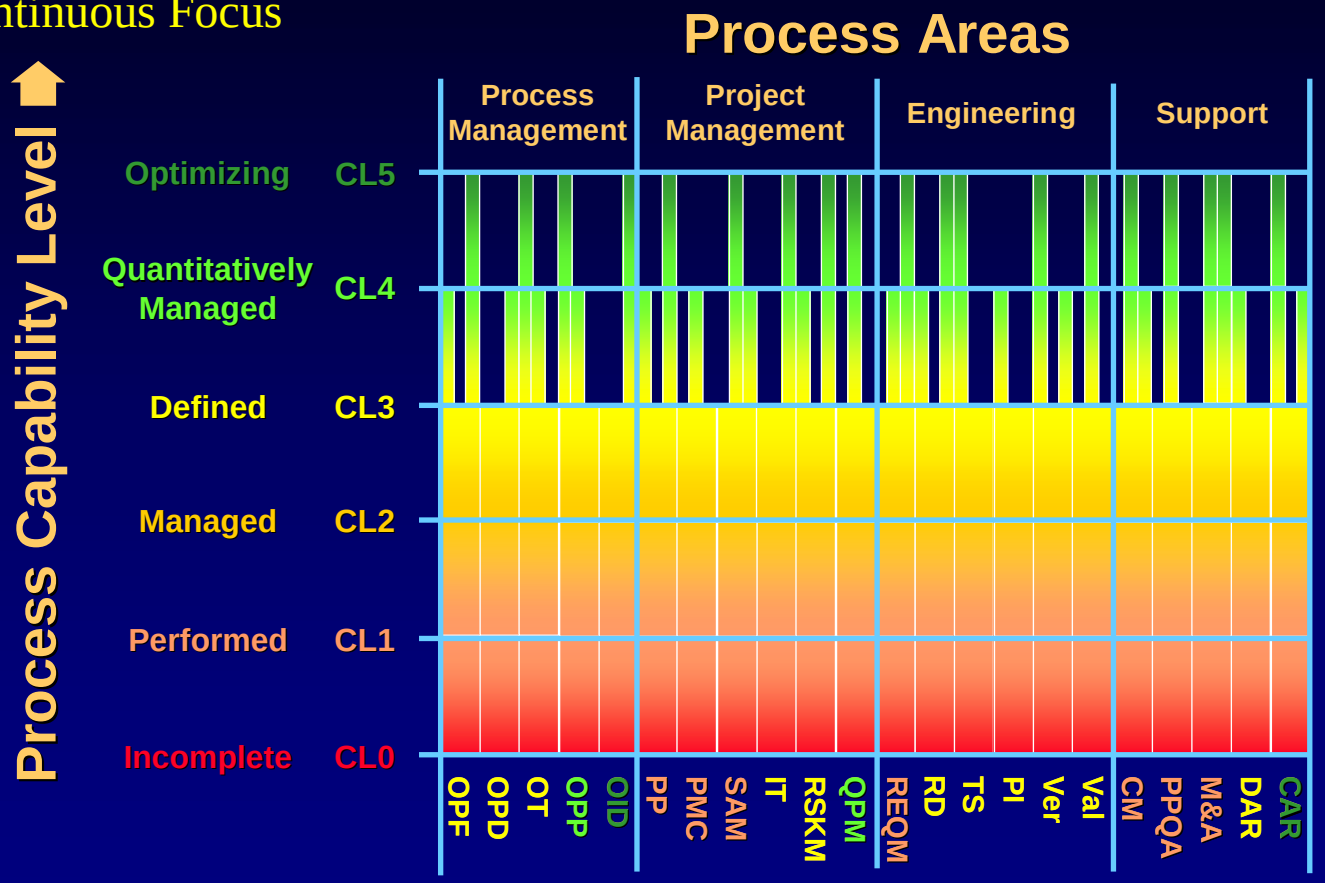

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Continuous Supported by Staged

In summary, the staged representation can provide structure for a continuous-focus initiative:

- as a guide for big picture “strategic” planning
- to “chunk” higher-granularity activities for senior management
- as a means for representing high-level success in “industry standard” terms key stakeholders will more readily understand

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The Point of All This

Two representations provide orthogonal views of the CMMI process areas.

Multiple perspectives facilitate understanding of process improvement and increase flexibility.

Using continuous and staged together

- takes advantage of the benefits of both representations
- minimizes the negative effects of their disadvantages

Using both representations increases the potential effectiveness and efficiency of process improvement initiatives.

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That's all, folks!

Your questions and observations, please…

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